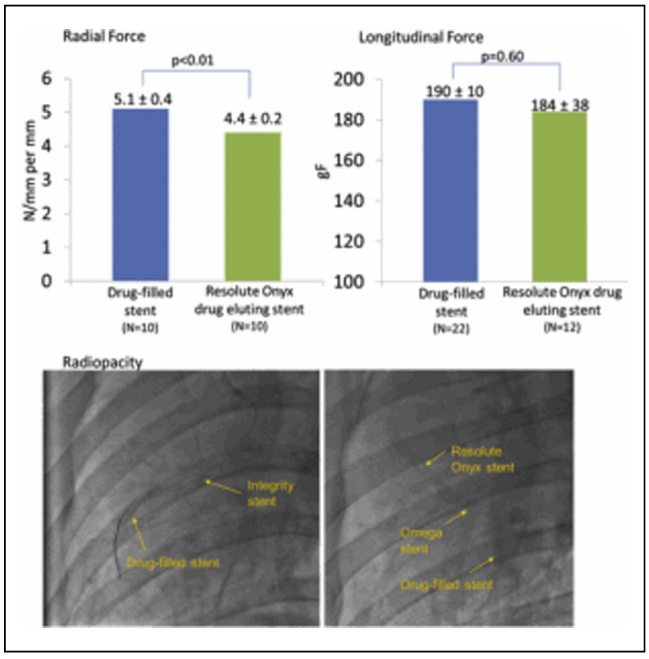

CATEGORIES CORONARY: Stents: Drug-Eluting

KEYWORDS Drug-eluting stent, Drug-eluting stent, sirolimus

TCT-581

Impact of Vessel Size on Clinical Outcomes of Revascularization With Biolimus A9TM-Eluting Stent in Patients with Acute Coronary Syndrome

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BACKGROUND Stenting of small vessels might be associated with higher rates of adverse events. The relationship between stent strut thickness and adverse clinical events remains particularly evident in smaller vessels. Recently published trial showed biolimus A9-eluting stent (BES) was non-inferior with sirolimus-eluting stent. However, the stainless steel stent platform of BES has a strut thickness of 112 μm. We assessed the impact of vessel size on clinical outcomes of stenting with BES.

METHODS The BEUTY registry was conducted to assess clinical performance of BiomatrixTM BES implantation in an unrestricted "real-world" cohort of patients with acute coronary syndrome (ACS) between May 2011 and July 2013. Clinical outcomes from the BEAUTY database were compared between patients with small (reference vessel diameter [RVD] $\leq$ 2.75 mm) versus large (RVD $>$ 2.75 mm) vessels. The primary endpoint was target vessel failure (TVF) defined as a composite of cardiac death, myocardial infarction, or clinical-driven target vessel revascularization at 12 months.

RESULTS Of 1,000 ACS patients with 1,251 lesions, 238 patients with 271 lesions had small vessel treated (n=238, 23.8%) and large vessel treated (n=756, 75.6%). Patients included in the small vessel group presented clinical profiles characterized by higher proportion of older age, diabetes, lower estimated creatinine clearance, multi-vessel coronary disease, or post-procedural TIMI flow grade <3. Patients in the small vessel group had a strong tendency of higher occurrence of TVF compared with those in the large vessel group (3.8% vs. 1.9%, unadjusted hazard ratio [HR] 2.05; 95% confidence interval [CI] 0.89-4.75; p = 0.09). In multivariate Cox proportional hazard analysis using age, diabetes, left ventricular ejection fraction, and aspirin during hospitalization, the small vessel group still showed a significantly higher incidence of TVF (adjusted HR 2.84; 95% CI 1.15 to 6.99; p = 0.023). The rate of TVF was consistently higher in the small vessel group than in the large vessel group across various high-risk subgroups.

CONCLUSIONS Stenting of BES at the small vessel appears to increase the risk of TVF in patients with ACS. Thus, in the PCI of the small vessels with BMS, cautions should be needed to obtain the best optimal results.

CATEGORIES CORONARY: Stents: Drug-Eluting

KEYWORDS Acute coronary syndromes, Biolimus, Percutaneous coronary intervention

TCT-582

The frequency of the Stent Fracture per Lesion: the Comparison between First and New Generation Drug-Eluting Stent

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BACKGROUND Stent fracture (SF) is related to restenosis after drug-eluting stent (DES) implantation. Although SF is rare complication in the era of new generation DES, the frequency of the SF per lesion is not known so much. We research the frequency of the SF per lesion, and compare between first and new generation DES implantation.

METHODS From November 2002 to May 2014, 10904 patients with 18068 lesions underwent DES implantation successfully. Of these, 14350 lesions were angiographically followed up after 6 to 8 months (midterm f/u) and 11387 lesions were followed up at 12 months after midterm f/u. First generation DES was defined as SES and PES. New generation DES was defined as EES and BES.

RESULTS The frequency of the SF in new generation DES is lower than that of the first generation DES (2.5% vs. 5.5%, P value $<$ 0.005). This tendency applies, even in per lesion, especially in left anterior descending (LAD) artery. And, in the restenosis lesion, left anterior descending artery only decreases the frequency of the SF (0% vs. 2.3%, P value $<$ 0.05). The frequency of the SF in right coronary artery (RCA) is higher than that in left coronary artery (LCA). The restenosis ratio in SF lesion is about 30%, and it is not improved even in new generation DES.

Table 1. Total number of Stent Fracture

	1st. DES total	2nd. DES total	P value
RCA	9.1%(264/2912)	5.6%(137/2452)	< 0.001
LMT	3.4%(27/795)	1.2%(8/655)	0.009
LAD	3.6%(116/3203)	0.5%(15/2870)	< 0.001
LCX	3.2%(59/1833)	1.4%(21/1549)	< 0.001
total	5.5%(441/8042)	2.5%(175/6925)	< 0.001